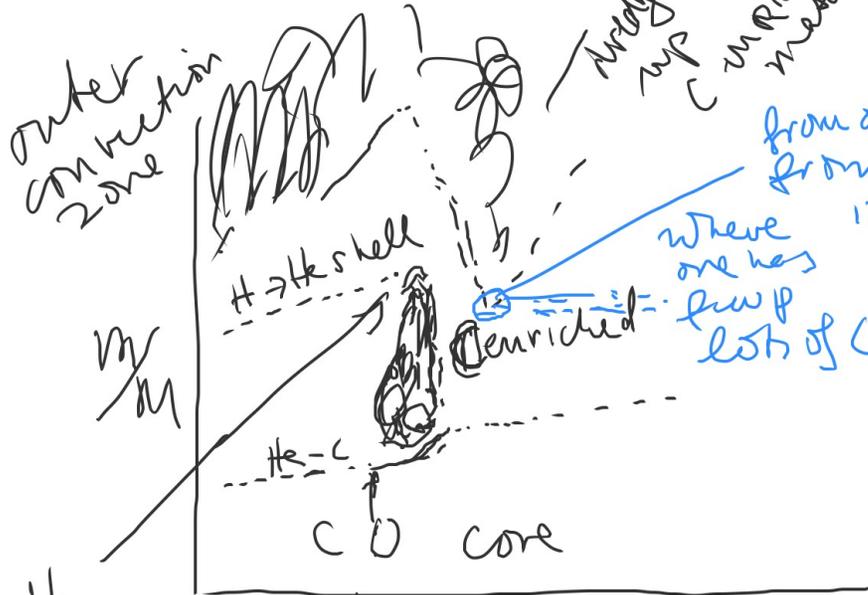


Thira dredge-up



H shell extinguished

flash starts
↓
He fusion
very vigorous

outer CVZ dredging up He processed mat → see C

Empirically: }
late in AGB

see C

see quite heavy elements, eg Ba, Sr, Pb, Tc

need neutrons

from outside: p
from inside: C

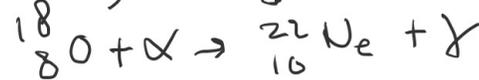
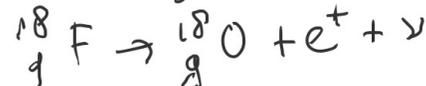
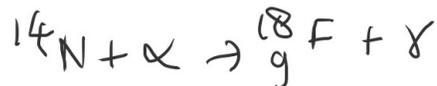


next flash: drawn in to He fusion region:

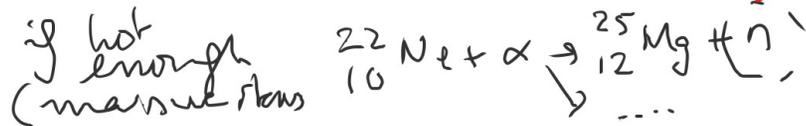


↑
source of neutrons

Also: H shell: C, N, O → ^{14}N
in He shell

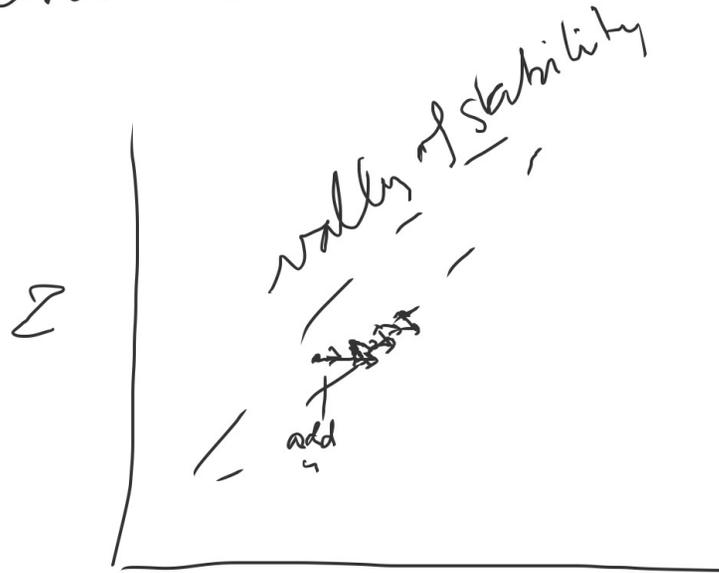


source of neutrons



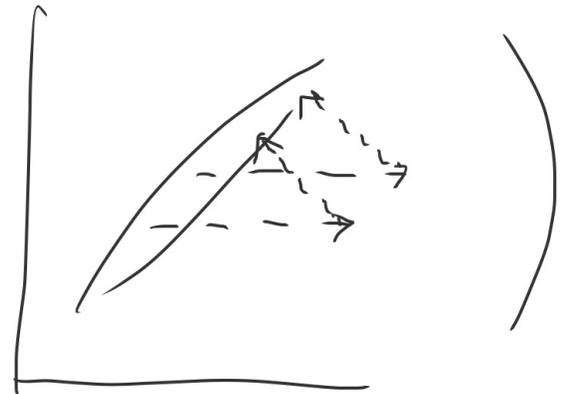
Source of neutrons, s process
 (slow addition of neutrons)

n sticks to other nuclei, preferentially larger, heavier nuclei
 add neutrons until element is unstable



make elements on
 n rich side
 peaks at Ba
 Sr
 Pb

A (as opposed to
 r process
 rapid



What evidence for final evolutions

- observe supernova directly
- compare with leftover \Rightarrow white dwarf

look at open cluster
know age, distance

look at WD $\Rightarrow T_{\text{eff}} \Rightarrow M$
cooling age

\Rightarrow cluster age - cooling age

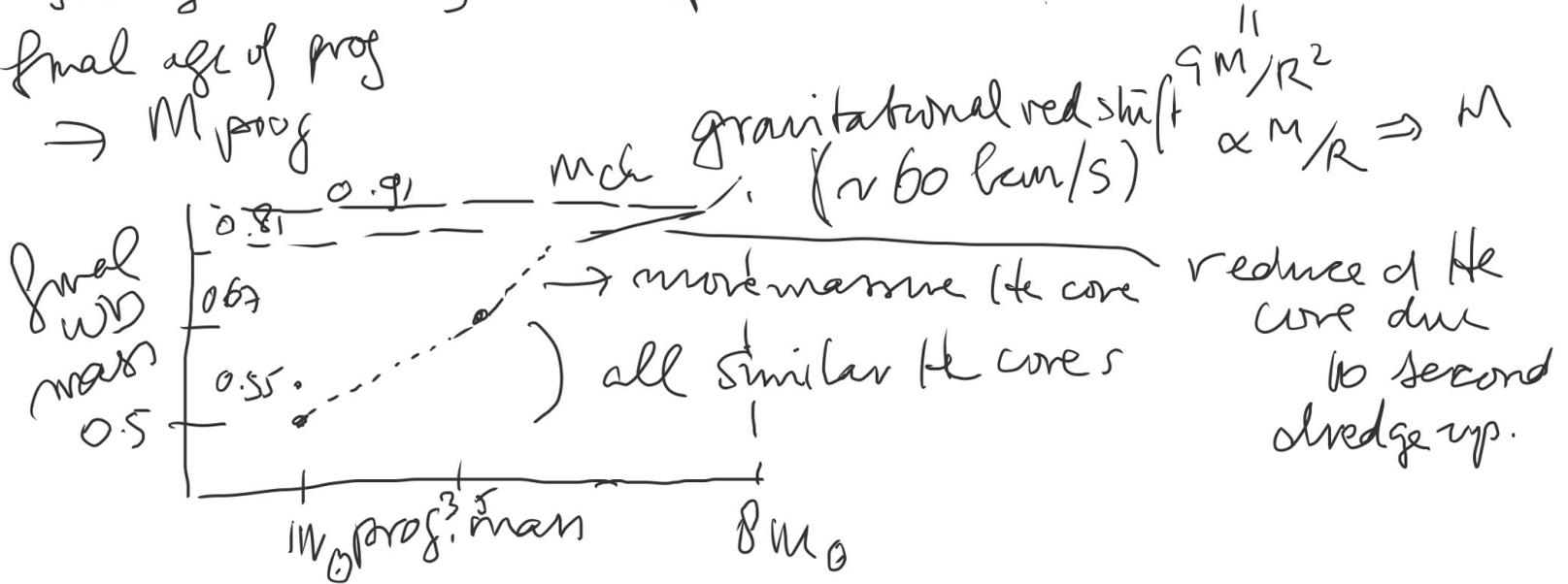
final age of prog

$\Rightarrow M_{\text{prog}}$

simple structure \Rightarrow
can infer the mass quite easily, using M-R relation

int. + T_{eff} + flux $\Rightarrow R \Rightarrow M$

spectrum $\Rightarrow T_{\text{eff}} + \log g \Rightarrow M$



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